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(71) Applicant

Ronald Dunn  
22 Ardmillan Gardens, Bangor, Co. Down,  
United Kingdom

(72) Inventor

Ronald Dunn

(74) Agent and/or Address for Service

Ronald Dunn  
22 Ardmillan Gardens, Bangor, Co. Down,  
United Kingdom

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F2V VX8  
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GB 2153050 A      GB 1529614 A      GB 0565291 A  
US 4643222 A

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INT CL<sup>5</sup> F16K, F16L

(54) Downstream venting air line connector

(57) A pipe connector comprising a male bayonet end fitting 11 for use with a female connector 10 to provide a quick action coupling incorporates a check valve closure member 12 having a bleed orifice which, on separation of the two-part coupling, permits slow safety venting of a hose associated with the end fitting 11.

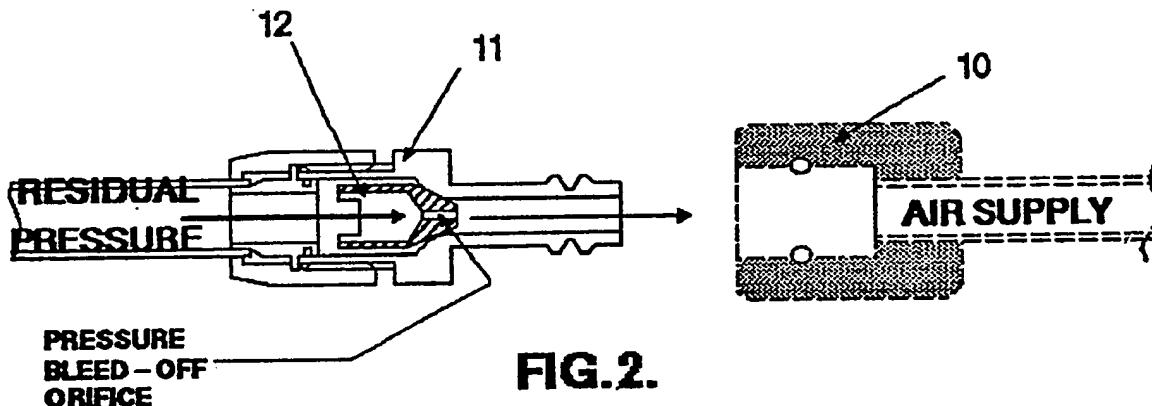
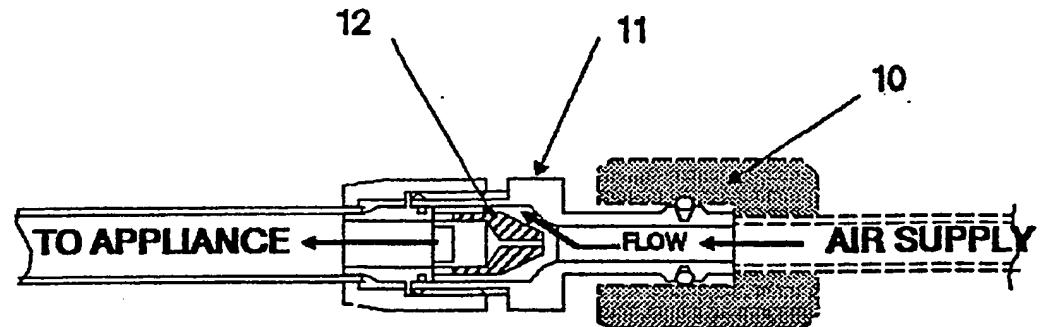


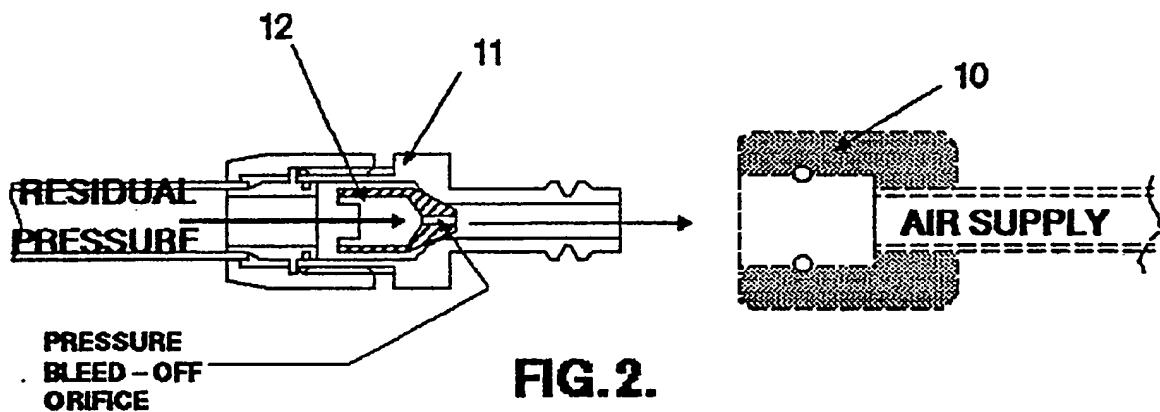
FIG.2.

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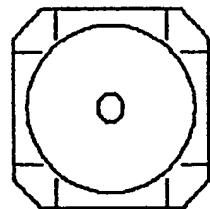
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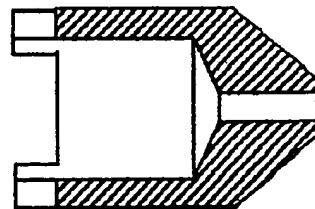
**FIG.1.**



**FIG.2.**



**Item 12**



**FIG.3.**

DOWNTSTREAM VENTING SAFETY AIR-LINE CONNECTOR

This invention relates to a downstream venting safety air line connector.

In current compressed air distribution systems, in workshops, educational establishments etc., individual air outlets are very often provided with snap action bayonet type connectors. By this means differing air tools can be quickly connected via a flexible hose to the main air distribution system. When such a connector has been in use and the flexible hose pressurised, if such quick action air connector is disconnected by depressing the normal lock ring etc., the air line connector bayonet will disengage very rapidly and very often flail about unless restrained by hand.

This 'flying' bayonet connector is a safety hazard as if it strikes a person on their face or especially on eyes severe damage can occur...even eye sight can be lost.

Other 'safety' connectors employ additional human actions to vent the downstream hose etc.

According to the present invention there is provided in the air line bayonet connector a one way restrictor that gives the following action automatically:

When connector is made....Compressed air flows through connector to tool

Fig 1. without significant restriction.

On disconnect.....Piston moves to its 'sealed' position but Fig.2 permits a controlled air leak through piston to slowly vent compressed air in flexible hose and air tool thus subduing violent movement of the bayonet connector. The venting ensures that the air tool system is safe for subsequent personnel.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawing in which:

Figure 1. Illustrates the downstream venting air line connector operation while air is flowing to appliance. When 'connector' 11 is connected to air supply check valve 10 the piston 12 is blown to the 'open' position as shown thus permitting air to flow to appliance.

Figure 2. Illustrates the downstream venting air line connector operation just after disconnection from main air supply and while it is venting compressed air from the flexible hose and air tool.

The piston 12 is blown to the 'shut' position by the residual air pressure which is slowly vented to atmosphere through the orifice in the nose of the piston.

Figure 3.

Illustrates by section and end views the piston configuration.

CLAIMS

1. By incorporation of a one way restrictor in a snap-action air line bayonet connector the safety hazard on disconnect is minimised i.e. movement of the bayonet is subdued.
2. Automatic venting prevents the future use of a sealed and pneumatically charged hose.

**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number

9023359.4

**Relevant Technical fields**

- (i) UK CI (Edition K ) F2V (VX8)
- (ii) Int Cl (Edition 5 ) F16K, F16L

**Search Examiner**

PAM HYETT

**Databases (see over)**

- (i) UK Patent Office
- (ii)

**Date of Search**

28 JANUARY 1992

**Documents considered relevant following a search in respect of claims**

1,2

<b>Category (see over)</b>	<b>Identity of document and relevant passages</b>	<b>Relevant to claim(s)</b>
X	GB 2153050 A (ROYAL ORDNANCE)	1,2
X	GB 1529614 (CARRIER CORP) see figures 2,3	1,2
X	GB 565291 (PARKER)	1,2
X	US 4643222 (WISER)	1,2

Category	Identity of document and relevant passages	Relevant to claim(s)

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